



## Release Notes for 3D Camera SDK, version 5.1 SR1 December 2015

This document contains the release notes for 3D Camera SDK version 5.1 SR1. The release also contains a new Ethernet Camera Application.

Compared to version 5.1, in this release iCon contains two functional updates

- A timeout can now be set to guarantee that buffer call-backs occur without delays even if network packets are lost. This timeout can be set to a specific value depending on the application's needs. By default it is set to infinity, keeping the same behaviour as in previous release.
- It is now possible to enable flush of data before the buffer is full. This setting ensures that the user receives the latest started buffer very rapidly after enable goes low, without requirements for further trig etc.

In addition to these new features the release includes a few reference manual updates, and bug fixes as described below.

### Supported HW

This release supports the following HW.

PRODUCT NAME	TYPE CODE
Ranger C*	RANGER-Cxxxxx
Ranger D	RANGER-Dxxxxx
Ranger E, ColorRanger E	RANGER-Exxxxx
Ruler E1200	RULER-E1xxx
Ruler E600	RULER-E2xxx
Ruler E150	RULER-E4xxx
ScanningRuler S1200	Ruler-S2114

\* The iCon Express extension does not support Ranger C but the other parts of the SDK may still be used together with Ranger C.

### Included components

COMPONENT	VERSION
Ethernet Camera application	5.1.2.9
Ethernet Camera FPGA	1.4.13.0
Ethernet monitor	3.0.0.6
iCon dll API	5.1.2.49



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COMPONENT	VERSION
Ranger Studio	5.1.2.76
eBUS SDK	3.1.3
Sapera SDK	7.10
DALSA Coreco X64-iPro driver	1.50

## Installation

It is recommended to install this SDK on a PC dedicated for SICK 3D camera use.

Run the *setup\_3DCamera\_5.1.2.76.exe* of this release. Follow the on-screen instructions to complete the setup.

Before use, please read the reference manual that applies for your SICK 3D camera. Take special note of the installation section. The reference manual will be installed when running the setup file and can, after installation, be found in the Help Menu of Ranger Studio, and in the Window's start menu under SICK->3D Cameras-> <Camera type>.

If using Ranger E, Ranger D or Ruler E, make sure to use the 3.1.3 version of the eBUS SDK. If it is not installed run the *ebus\_sdk\_3.1.3.2846.exe* file and activate the driver. Please refer to the reference manual for more details.

Check if a camera upgrade is needed, see section above. If so, follow the update FW procedure described in the reference manual for your camera.

**Note:** When upgrading the firmware on Ranger E/D, Ruler E or ScanningRuler cameras from versions prior to 3.0.0.18, the error message "Flash failed" may be given even though the upload was successful. If so, reboot your camera and check the firmware versions (FPGA and Camera Application). If these are matching your selected files, the upgrade has been successful and everything is OK.

**Note:** To run 64-bit applications you need to install the 64-bit version of "Microsoft Visual C++ 2008 Service Pack 1 Redistributable Package ATL Security Update", if it is not already installed on your PC.

**Note:** If you can select the Ranger's IP address in the list, but the connection fails, make sure that the IP address for the PC's NIC is correctly set.

## System recommendations

- PC with MS Windows OS (XP/7) and at least 4GB system memory. The following OS variants are supported:
  - Windows XP Pro SP3 32 bit (Ranger C/E/D, Ruler E and ScanningRuler)
  - Windows 7 32 bit (Ranger C/E/D, Ruler E and ScanningRuler)
  - Windows 7 64 bit (Ranger C/E/D, Ruler E and ScanningRuler)
- A Gigabit Ethernet adapter supporting Jumbo Frames is highly recommended.



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- In order to use the iCon Express extension of iCon and the provided Ranger Studio, the Pleora high performance driver must be installed and activated (eBUS SDK)
- For Ranger C, a CameraLink compatible frame grabber is required (base configuration).  
**Note:** For data visualization in Ranger Studio, Windows XP/Windows 7 32 bit and Dalsa X64-CL or X64-iPro frame grabbers are required.
- Intel Gigabit network adapters are recommended.

## Supported compilers

This release of the 3D Camera SDK supports C++ and .NET in Visual Studio and has been verified with:

- Visual Studio 2005
- Visual Studio 2008
- Visual Studio 2010
- Visual Studio 2012

It is recommended to use the latest available Service Packs (SP) for Visual Studio.

## Summary of new product features

FUNCTIONALITY NAME AND DESCRIPTION
<b>Configurable timeout parameter</b> <ul style="list-style-type: none"><li>• It is now possible to set a low level timeout value for Pleora eBus. FGEthernetFastParameters::setLowLevelTimeouts()</li></ul>
<b>Added “Use Enable” setting allowing immediate buffer release</b> <ul style="list-style-type: none"><li>• Camera starts scanning on the defined edge on the enable signal.</li><li>• Suitable when it is desired to prematurely end the current buffer by using the Enable signal, for example when scanning objects of varying lengths. In this mode the PC will receive the current buffer directly after the Enable signal goes low. The remaining buffer will be padded with the last triggered profile. The status of the Enable signal for the padding will be 0. Bit 26 in the mark data is also used to indicate that the profile contains invalid data.</li><li>• This mode is only available in measurement mode where enable information can be added with mark.</li></ul>

## Improvements and Corrections

IMPROVEMENTS AND CORRECTIONS
“clear()” function is now available in “SubcomponentAndShiftList” class (TDC-2792)
The “icon_wrtraits_createWorldRangeTraits” now returns a valid traits_t_handle (TDC-2850)



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### IMPROVEMENTS AND CORRECTIONS

A memory leak in .Net filters is fixed (TDC-2854)

**NOTE:** This require a recompilation from source for 5.1 → 5.1 SR1

Parameter “measurement ROI overlay” has been enabled by default in Ranger Studio (TDC-2765)

Mark data is now present for the COG component when using IconExpress. (TDC-2791)

A thread safety problem in CalibrationFilter::apply() has been fixed (TDC-2828)

### Known limitations

#### KNOWN LIMITATIONS

With the High Performance driver solution, maximum profile rate can be slightly lower for some configurations. Also, note that using small buffers in the iCon frame grabber class may lower the maximum profile rate when using the High Performance driver.

Ranger Studio will not be able to display images from a ScanningRuler camera if the buffer callbacks enabled parameter is set to false.

Only 1 Gbit/s Ethernet connections are supported, not 10 Mbit/s or 100 Mbit/s connections.

White balancing of the color components only works in explicit reset mode.

Maximum buffer size for high performance driver is 63.95 MB per iCon buffer for all operating systems, except Windows XP 64 bit where the limit is 32 MB.

Receiving data from multiple ScanningRulers simultaneously may exceed the available network and PC capacity.

Sending commands (eg. set/getParameterValue) or when GigE Vision device discovery broadcast are received while the camera is running might cause missing scans.

### Known issues

#### KNOWN ISSUE

Delayed sweep start. In some cases after configuration of the ScanningRuler parameters, the first sweep may be delayed but the resulting scan is correct. The following sweeps work OK. (TDC-2626)

If a lot of network packets are lost, the system can enter a state where data corruption in the output buffer can occur even in subsequent ScanningRuler sweeps. Stopping and starting the system solves the problem. (TDC-2606)

Only one Hi3D DCM component may have scatter activated. (TDC-928).

DCM creates out-of-bounds values for certain values of start row and number of rows 16. (TDC-887).

Explicit reset in HorThr with less than 64 rows may cause problems. (TDC-1002).

When using morphology filters in HorThr and HorMaxThr, the scale and offset traits are incorrect. This mainly affects systems that are calibrated. It is recommended that calibration is



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#### KNOWN ISSUE

done with morphology settings identical to those used in the application that uses the calibrated camera. (TDC-1089).

### CamApp and FPGA (Ranger C)

#### KNOWN ISSUE

HorThr with Output select = 3 sometimes produces missing data  $\neq 0$  (TDC-2036)

Ranger C can't load parameter file HorMax using 512 rows (TDC-1132)

HorThr cannot be used with binning (TDC-1068)

Ranger C camera may stop sending data when over triggered if Mark is enabled. Sending a stop/start command sequence to the camera will get it to run again. (TDC-477)

HorMax does not report missing data as 0. (TDC-755)

### Contact

For general questions please contact your local SICK subsidiary first hand.  
Contact information to all SICK subsidiaries:

<http://www.sick.com/group/EN/home/general/Pages/Worldwide.aspx>

For technical support, please use the SICK Support Portal:

<http://visionsupport.sick.com/>